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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,482	03/10/2006	James M. Connors	12025-2	7798
42188 7590 03/17/2008 DANIEL B. SCHEIN, PH.D., ESQ., INC. P. O. BOX 68128 Virginia Beach, VA 23471				
EXAMINER				
TRIEU, THAI BA				
ART UNIT		PAPER NUMBER		
3748				
MAIL DATE		DELIVERY MODE		
03/17/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/541,482

**Applicant(s)**

CONNERS, JAMES M.

**Examiner**

Thai-Ba Trieu

**Art Unit**

3748

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

### **DETAILED ACTION**

This Office action is in response to the amendment filed on January 03, 2008. Applicant's cooperation in correcting the informalities in the drawings and the specification is appreciated. Applicant's cooperation in amending the claims to overcome the claim rejections relating to indefinite claim language is also appreciated.

Claims 1-8 and 10-13 were amended; and claim 9 was cancelled.

### ***Oath/Declaration***

The Oath/Declaration filed on January 03, 2008 is accepted.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

- In claim 11, line 17, the recitation of "for receiving fuel and combusting same in a combustion process" renders the claim indefinite, since it is not clear that the combustor combusts fuel or air fuel mixture? what does the word "same" mean? Does it mean combustor for receiving and combusting fuel in a combustion process with the pressurized air? Applicant is required to clarify or to revise the claimed limitation.

- In claim 11, lines 23-24, the recitation of "for receiving the second exhaust products and expanding same substantially adiabatically..." renders the claim indefinite, since it is not clear that what does the word "same" mean? Does it mean a positive gas expander for receiving and expanding substantially adiabatically the second exhaust products to produce...? Applicant is required to clarify or to revise the claimed limitation.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thill (Patent Number 4, 245,597), in view of Holtzapple et al. (Pub. Number US 2002/0014069 A1).***

Takahashi discloses an engine for use with a load, said engine comprising: a compressor (8, 9) adapted to receive power and, upon receiving power, to periodically define a chamber; fill the chamber with ambient air; and carry out a pressurization process wherein the chamber volume is decreased to produce pressurized air,

a combuster (13) for receiving fuel and combusting said fuel in a combustion process with the pressurized air to produce primary exhaust products,

a positive displacement air motor (10) adapted to be driven by the primary exhaust products to produce power and secondary exhaust products,

a positive displacement gas expander (11) for receiving the secondary exhaust products and. expanding same substantially adiabatically to produce tertiary exhaust products and power, and

a power transfer means (30) for directing power produced by the air motor (10) and the gas expander (11) in use to drive the compressor (8, 9) and the load,

wherein:

the combuster (13) is adapted to receive varying amounts of fuel, thereby to cause the power transfer means (30) to drive the load with varying amounts of power in use; and the compressor (8, 9) is adapted to, during the pressurization process, release air from the chamber for said combustion in a manner such that the pressure in the chamber during the pressurization process and the pressure of the primary exhaust products driving the air motor (10) is at a substantially constant level at steady state conditions, said level adjusting spontaneously to the load being driven by the power;

wherein the compressor (8, 9) is a rotary compressor;

wherein the air motor (10) is a rotary air motor;

wherein the gas expander (11) is a rotary gas expander;

wherein the power transfer means (30) comprises a shaft operatively coupled to each of the compressor (8, 9), the air motor (10) and the gas expander (11);

wherein the expansion ratio defined by the expander (11) is larger than the compression ratio defined by the compressor (8, 9) (See Figure 4, Column 4, lines 40-68, Columns 5-6, lines 1-68, Column 7, lines 1-56).

However, Thill fails to disclose a reservoir; and the combustor comprising a tubular combustor.

Holtzapple teaches that it is conventional in the engine art, to utilize a reservoir (214) adapted to receive pressurized air from the compressor (106), the combustor means (900) comprises a tubular combustor (See Figures 9); and the combustor (112) receiving air for said combustion from the reservoir (214) (See Figure 2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a reservoir; the tubular combustor; and the combustor receiving air for said combustion from the reservoir as taught by Holtzapple, to improve the efficiency of the Thill device.

***Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thill (Patent Number 4,245,597), in view of Holtzapple et al. (Pub. Number US 2002/0014069 A1), and further in view of Sauder (patent Number 3,724,427).***

The modified Thill discloses the invention as recited above; however, fails to disclose a three stage compressor.

Sauder teaches that it is conventional in the art of rotary internal combustion engines, to utilize the compressor being a three stage-compressor (204, 206, 208) (See Figures 9-10).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a three stage compressor, as taught by Sauder, to improve the efficiency for the modified Thill device.

#### ***Allowable Subject Matter***

Claim 11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claim 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 1-8 and 10-13 have been considered but are moot in view of the new ground(s) of rejection.

***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone



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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thai-Ba Trieu/

TTB  
March 08, 2008

Thai-Ba Trieu  
Primary Examiner  
Art Unit 3748